

11-26-03

SLU 4554.1
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of Shelley Minter et al.

Group Art Unit 1745

Serial No. 10/617,452

Filed July 11, 2003

Confirmation No. 4859

For ENZYME IMMOBILIZATION FOR USE IN BIOFUEL CELLS AND SENSORS

Examiner To Be Assigned

November 25, 2003

COMMISSIONER FOR PATENTS

P.O. BOX 1450

ALEXANDRIA, VIRGINIA 22313-1450

SIR:

§

INFORMATION DISCLOSURE STATEMENT

* In accordance with 37 C.F.R. 1.97 and 1.98 and MPEP 609, and in compliance with the duty of disclosure set forth in 37 C.F.R. 1.56, applicants submit the attached PTO/SB/08A for consideration by the Patent and Trademark Office in the above-entitled application and to be made of record therein. In accordance with the Pre-OG notice of July 11, 2003 partially waiving the requirements of 37 C.F.R. 1.98(a)(2)(i), copies of the U.S. patent documents are not supplied. Applicants submit herewith copies of the foreign patent documents/literature references.

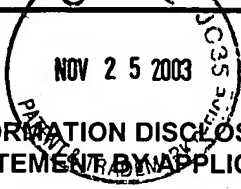
Respectfully submitted,

Kathleen M. Petrillo, Reg. No. 35,076
SENNIGER, POWERS, LEAVITT & ROEDEL
One Metropolitan Square, 16th Floor
St. Louis, Missouri 63102
(314) 231-5400

JSH/dfw

*Attachments

Express Mail Label No. EL 998651192 US

PTO/SB/08A  INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	10/617,452
				Filing Date	July 11, 2003
				Confirmation Number	4859
				First Named Inventor	Shelley Minter
				Group Art Unit	1745
				Examiner Name	To Be Assigned
Sheet	2	of	4	Attorney Docket No.	SLU 4554.1

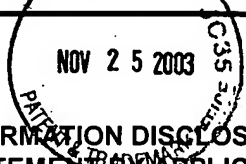
U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
	1	4,117,202		Beck, Timothy A.	09-26-1978
	2	4,490,464		Gorton, Lo G. et al.	12-25-1984
	3	4,705,503		Dorman, Frank D. et al.	11-10-1987
	4	4,761,209		Bonaventura, Joseph et al.	08-02-1988
	5	5,264,092		Skotheim, Terje et al.	11-23-1993
	6	5,393,615		Corey, Paul F. et al.	02-28-1995
	7	6,294,281	B1	Heller, Adam	09-25-2001
	8	6,460,733	B2	Acker, William P. et al.	10-08-2002
	9	6,500,571	B2	Liberatore, Michael James et al.	12-31-2002
	10	6,531,239	B2	Heller, Adam	03-11-2003
	11	20020025456	A1	Gieshoff, Jurgen et al.	02-28-2002
	12	20020025469	A1	Heller, Adam	02-28-2002
	13	20020127440	A1	Yamamoto, Noriyuki et al.	09-12-2002
	14	20030039868	A1	Liberatore, Michael James et al.	02-27-2003
	15	20030087144	A1	Sun, Hoi-Cheong Steve et al.	05-08-2003

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A					
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	10/617,452
				Filing Date	July 11, 2003
				Confirmation Number	4859
				First Named Inventor	Shelley Minter
				Group Art Unit	1745
Examiner Name				To Be Assigned	
Sheet	3	of	4	Attorney Docket No. SLU 4554.1	

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T ⁶
		Office	Number ⁴	Kind Code ² (if known)			

OTHER ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	16	BLAEDEL, W.J.; JENKINS, ROGER A., "Study of the Electrochemical Oxidation of Reduced Nicotinamide Adenine Dinucleotide," <i>Analytical Chemistry</i> 47 (1975) 1337-1338.	
	17	DAVIS, GRAHAM; HILL, H. ALLEN O.; ASTON, WILLIAM J.; HIGGINS, I. JOHN; TURNER, ANTHONY P.F., "Bioelectrochemical Fuel-Cell and Sensor Based on a Quinoprotein, Alcohol-Dehydrogenase," <i>Enzyme and Microbial Technology</i> 5 (1983) 383-388.	
	18	GREEN, DAVID W.; SUN, HONG-WEI; PLAPP, BRYCE V., "Inversion of the Substrate Specificity of Yeast Alcohol Dehydrogenase," <i>Journal of Biological Chemistry</i> 268 (1993) 7792-7798.	
	19	PALMORE, G. TAYHAS R.; BERTSCHY, HUGO; BERGENS, STEVEN H.; WHITESIDES, GEORGE M., "A Methanol/Dioxygen Biofuel Cell that Uses NAD+-Dependent Dehydrogenases as Catalysts: Application of an Electro-Enzymic Method to Regenerate Nicotinamide Adenine Dinucleotide at Low Overpotentials," <i>Journal of Electroanalytical Chemistry</i> 443 (1998) 155-161.	
	20	PALMORE, G. TAYHAS R.; WHITESIDES, GEORGE M., "Microbial and Enzymatic Biofuel Cells," in ACS Symposium Series 566 (1994) 271-290.	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.

PTO/SB/08A				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	10/617,452
				Filing Date	July 11, 2003
				Confirmation Number	4859
				First Named Inventor	Shelley Minter
				Group Art Unit	1745
				Examiner Name	To Be Assigned
Sheet	4	of	4	Attorney Docket No.	SLU 4554.1

	21	PLOTKIN, E.V., HIGGINS, I.J.; HILL, H.A.O., "Methanol Dehydrogenase Bioelectrochemical Cell and Alcohol Detector," <i>Biotechnology Letters</i> , Vol. 3, No. 4 (1981) 187-192.	
	22	SCHRENK, MATTHEW J.; VILLIGRAM, ROBERT E.; TORRENCE, NICHOLAS J.; BRANCATO, SAM J.; MINTEER, SHELLEY D., "Effect of Mixture Casting Nafion® with Quaternary Ammonium Bromide Salts on the Ion-Exchange Capacity and Mass Transport in the Membranes," <i>Journal of Membrane Science</i> 205 (2002) 3-10.	
	23	THOMAS, TRISHA J.; PONNUSAMY, KARTHIK E.; CHANG, NANCY M.; GALMORE, KIM; MINTEER, SHELLEY D., "Effects of Annealing on Mixture-Cast Membranes of Nafion® and Quaternary Ammonium Bromide Salts," <i>Journal of Membrane Science</i> , Vol. 213, (2003) 55-66.	
	24	WORTHINGTON, V., "Worthington Alcohol Dehydrogenase," Worthington Enzyme Manual (1988) 16, pp. 1-22, http://www.worthington-biochem.com/ADH/default.html .	
	25	YUE, P.L.; LOWTHER, K., "Enzymatic Oxidation of C1 Compounds in a Biochemical Fuel Cell," <i>Chemical Engineering Journal</i> , 33B (1986) B69-B77.	
	26	ZHOU, DONG-MEI; FANG, HUI-QUN; CHEN, HONG-YUAN; JU, HUANG-XIAN; WANG, YUN, "The Electrochemical Polymerization of Methylene Green and its Electrocatalysis for the Oxidation of NADH," <i>Analytica Chimica Acta</i> 329 (1996) 41-48.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Unique citation designation number. ²See attached Kinds of U.S. Patent Documents. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, D.C. 20231.